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BULLETIN

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MASB 22-89 17 March 1989

Data Bus Network Tester S2460

Background. The UK's Shrinemark Digital Equipment Ltd is marketing hand-portable test equipment for checking out MIL-STD-1553 or similar data highway systems. The test boxes can be used at flight line, hanger, production/depot, and development levels. In the UK, applications are being made for use on aircraft, ships, and vehicles as well as within the equipment industry. A ruggedized version of the network tester is being packaged in a box approved by the Royal Aircraft Establishment for further trials with the Royal Navy.

Description. The Shrinemark installed bus network tester S2460 (see Figure 1) has been designed specifically to test and fault-find the transmission system used in MIL-STD-1553. The design is such that detection of open circuits, short circuits, cross-overs, short circuits to screen, and insertion loss measurements can all be made simultaneously, thereby reducing the time taken to check out a complete transmission system, or isolate a fault within the system.

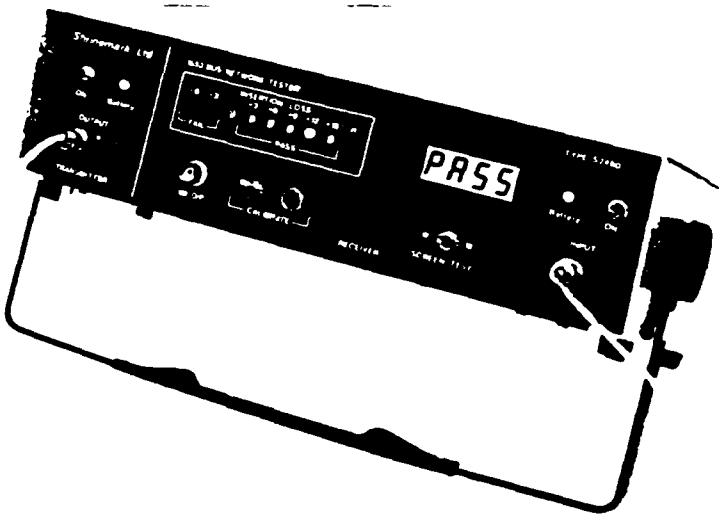

Figure 1. The Shrinemark S2460 bus network tester.

The testers can be used on a MIL-STD-1553 data bus from a few meters to several hundred meters and allows one-man operation in all cases.

Features:

- Simplicity of use
- Lightweight and portable
- Battery powered (12 hours minimum before recharge)
- Battery charger supplied
- Simple calibration procedure
- No disconnection of main bus required
- Fault detection and location
- Indication to recharge batteries provided

Functions measured:

- Short-circuits between the twisted pairs of bus or stubs
- Open circuits on bus or stubs
- Cross-overs of the twisted pairs, on bus or stubs
- Short-circuits between either of the wires of the twisted pair to the screen system
- Detection of open circuit or short-circuit bus terminating resistors
- Insertion loss between any two remote terminals

Displays. LCD giving PASS/FAIL indication for open circuits, short-circuits, cross-overs, and short-circuits to screen system, will also differentiate which of the wires of the twisted pair is shorted to screen. LED system giving insertion loss information in dB. Pass or fail margin from limiting case given in 3 dB steps.

Specifications

Transmitter output terminated into 75 Ω
Measurement of insertion loss: 5.5 volts
Peak-to-peak frequency: 200 kHz
Measurement of O/C, S/C cross-overs and S/C to screen: 4.5 volts, 5 kHz repetition rate
Receiver sensitivity: -7 dB to -31 dB with respect to transmitter amplitude
Battery life before recharge: 12 hours minimum (Mains battery charger provided with tester.)
Calibration: At -25 dB, using calibration lead S2461 supplied
Connectors: amphenol external leads 711-5000-1
Dimensions: (excluding handle) 304x84x210 mm
Weight: 2.19 kg
Options: Digital insertion loss module S2480 gives measurement of the insertion loss between any two remote terminals to ±0.5 dB.